What is claimed is:

1. An arrangement for generating intensive radiation based on a plasma, comprising:

a target generator with a nozzle for metering and orientation of a target flow for plasma generation;

a vacuum chamber; and

a high-energy excitation radiation being directed to the target flow in the vacuum chamber and the target flow being completely converted piece by piece by a defined pulse energy of the excitation radiation into a plasma having a high conversion efficiency for the intensive radiation in a desired wavelength region;

said nozzle of the target generator being a multiple-channel nozzle with a plurality of separate orifices, the orifices generating a plurality of target jets, the excitation radiation for generating plasma being directed simultaneously portion by portion to the target jets.

2. The arrangement according to claim 1, wherein the individual orifices of the nozzle are arranged in such a way that a radiation spot focused by the excitation radiation on all of the target jets exiting the nozzle is covered spatially essentially uniformly by parallel target jets, all of the target jets being completely irradiated over their diameter.

3. The arrangement according to claim 2, wherein the individual orifices of the nozzle are arranged in at least one row.

4. The arrangement according to claim 2, wherein the individual orifices of the nozzle are arranged in such a way that the target jets fill the radiation spot of the excitation radiation without gaps and without overlapping, wherein the orifices of the nozzle are arranged so as to be offset to the direction of the excitation radiation for target jets appearing adjacent to one another in the radiation spot.

5. The arrangement according to claim 2, wherein the individual orifices of the

nozzle are arranged in a row, wherein the row of orifices encloses an angle between 45° and 90° with the incident direction of the excitation radiation.

6. The arrangement according to claim 4, wherein the individual orifices of the nozzle are arranged in a plurality of rows so as to be offset to one another.

7. The arrangement according to claim 6, wherein the orifices are provided as parallel rows with an equal spacing between the orifices in the nozzle, wherein the rows are arranged one behind the other with respect to the incident direction of the excitation radiation and are arranged so as to be offset relative to one another by a fraction of the spacing between the orifices depending upon the quantity of rows arranged one behind the other.

8. The arrangement according to claim 7, wherein the orifices of the nozzle are arranged in two parallel rows which are oriented orthogonal to the direction of the excitation radiation and are offset relative to one another by one half of the orifice spacing.

9. The arrangement according to claim 6, wherein the rows of orifices intersect, and intersecting rows share their first or last orifice as a common intersection and are oriented in a mirror-symmetric manner relative to the incident direction of the excitation radiation at the same angle of intersection.

10. The arrangement according to claim 9, wherein two intersecting rows of orifices are oriented in a V-shaped manner relative to the incident direction of the excitation radiation.

11. The arrangement according to claim 10, wherein the V-shape is oriented with the tip in the incident direction of the excitation radiation.

12. The arrangement according to claim 10, wherein the V-shape is oriented with the opening opposite to the incident direction of the excitation radiation.

13. The arrangement according to claim 1, wherein a pulsed energy beam is provided as excitation radiation, wherein the energy beam has a focus whose cross-sectional area covers the width of all adjacent target jets simultaneously.

14. The arrangement according to claim 13, wherein the energy beam is generated

by a pulsed laser.

15. The arrangement according to claim 13, wherein the energy beam is a particle beam, particularly an electron beam.

16. The arrangement according to claim 13, wherein the energy beam is a particle beam, particularly an ion beam.

17. The arrangement according to claim 13, wherein the energy beam is focused through suitable optics on the target jets on a focus line which is oriented orthogonal to the direction of the target jets.

18. The arrangement according to claim 13, wherein the energy beam is composed of a plurality of individual energy beams, wherein the energy beams are arranged in a row orthogonal to the direction of the target jets to a quasi-continuous focus line by suitable optical elements and strike the target jets simultaneously.

19. The arrangement according to claim 13, wherein the energy beam is composed of a plurality of individual energy beams, wherein each of the individual energy beams is focused on a target jet and all target jets are irradiated simultaneously.

20. The arrangement according to claim 18, wherein a laser with beam-splitting optical elements is provided for generating the row of individual energy beams.

21. The arrangement according to claim 18, wherein a plurality of synchronously operated lasers is provided for generating the row of individual energy beams.

22. The arrangement according to claim 13, wherein the energy beam is optimized with respect to the efficiency with which it couples in energy through the use of multiple pulses, particularly double pulses, comprising a pre-pulse and a main pulse.

23. The arrangement according to claim 1, wherein the target jets proceeding from the orifices of the multiple-channel nozzle are continuous jets in the area of the interaction with the excitation radiation.

24. The arrangement according to claim 1, wherein the target jets proceeding from the orifices of the multiple-channel nozzle fall in drops at the latest in the area of interaction

with the excitation radiation.

25. The arrangement according to claim 1, wherein the target jets are liquid jets.

26. The arrangement according to claim 1, wherein the target jets are frozen solid jets when exiting from the nozzle into the vacuum chamber.

27. The arrangement according to claim 23, wherein the target jets are generated from condensed xenon.

28. The arrangement according to claim 23, wherein the target jets are generated from aqueous solution of metallic salts.

29. A method for using the arrangement according to claim 1, comprising the step of generating plasma-generated radiation in the wavelength regions between soft x-ray radiation and the infrared spectral region.

30. A method for using the arrangement according to claim 1, comprising the step of generating EUV radiation in the wavelength region between 1 nm and 20 nm for devices for semiconductor lithography, particularly for EUV lithography in the region of 13.5 nm.